a transmitter for transmitting the location of said reference GPS receiver from the Base Transceiver Station to the GPS-equipped mobile terminal responsive to said request for said approximate locational information; and

determination means for determining the approximate location of the GPS-equipped mobile terminal using said transmitted location of said reference GPS receiver;

wherein said transmitter transmits over one of:

a Cell Broadcast (CB) Short Message Service (SMS) message over the wireless telecommunications system; or

a Broadcast Control Channel (BCCH) of the wireless telecommunications system.

REMARKS

Favorable reconsideration of the above-identified application, as presently amended, is respectfully requested.

Responsive to the Office Action dated March 9, 2001, Applicant has amended claims 1, 8, 9, 11, 13, 20, 21, 24, 31, 32, 34, 36, 43, and 44, and canceled claims 2, 3, 10, 12, 22, 25-26, 33, 35, and 45. Therefore, Claims 1, 4-9, 11, 13-21, 23-24, 27-32, 34, 36-44, and 46 remain pending in the application. Reconsideration and allowance are respectfully requested in view of the foregoing amendments and the following remarks.

In the Office Action, Claims 1, 5-8, 13, 14, 16-20, 23, 24, 28-31, 36, 37, 39-43, and 46 were rejected under 35 U.S.C. 102 (e) as being anticipated by Krasner (U.S. Patent No. 6,133,874).

Applicant further notes that Claims 2-3 and 25-26 were objected to for being dependent upon a rejected base claim. However, the Examiner has stated that these claims would be allowable if rewritten in independent form to include all of the limitations of the associated base claim.

Accordingly, Applicant submits that independent Claims 1, 13, 24, and 36 have been amended in the following manner. With respect to independent Claim 1, Applicant has incorporated the limitations of Claims 2 and 3, such that Claim 1 further recites that the GPS satellite signals comprise one of: *Standard Positioning Service (SPS) signals received on an L1 frequency, said L1 frequency being centered at about 1575.42 MHz; or Precise Positioning Service (PPS) signals received on an L2 frequency, said L2 frequency centered at about 1227.60 MHz.* Likewise, independent Claims 13, 24, and 36 have been similarly amended to incorporate Claims 25 and 26. Claims 1, 13, 24, and 36 are now in condition for allowance.

With regard to Claims 8, 20, 31, and 43, Applicant notes that these claims have been amended into independent claims, such that they now include certain elements of Claims 1, 13, 24, and 36, respectively. In response to the Examiner's rejection of Claims 8, 20, 31, and 43, Applicant respectfully submits that Krasner fails to describe the method wherein the step of originating a request for approximate navigational information from the GPS-equipped mobile terminal to the Base Transceiver Station is responsive *to a determination that the GPS signal strength at the mobile terminal is inadequate to permit initialization of the reference GPS receiver associated with the GPS-equipped mobile terminal within a desired response time.* In contrast, Krasner describes the transmission of a request for SPS assistance information at the request of the user of the SPS receiver

or at the request of another user remotely located from the SPS receiver (Column 15, lines 42-48). Moreover, with regard to the Examiner's citation that Krasner approximates a position based on signal strength, Applicant respectfully submits that Krasner states that *if the received signal strength is strong enough,* then time information can be obtained from the first received signal within a period of six seconds (Column 6, lines 50-54). Krasner fails to *originate a request* for approximate navigational information *responsive* to a determination that the GPS signal strength at the mobile terminal is inadequate. Therefore, Applicant respectfully submits that Krasner fails to teach, suggest, or render obvious amended Claims 8, 20, 31, and 43 of the present invention.

Claims 4, 9-12, 15, 21, 22, 27, 32-35, 38, 44, and 45 were rejected under 35 U.S.C. 103 (a) as being unpatentable for obviousness over Krasner.

With regard to Claims 9-10, Applicant first notes that these claims have been combined into a single independent Claim 9, such that the step of transmitting recovered navigational data signals *to the GPS-equipped mobile terminal* is performed via one of: a Cell Broadcast (CB) Short Message Service (SMS) or a Broadcast Control Channel (BCCH). With respect to the Examiner's citation of Krasner's satellite message data (Column 14, lines 33-37), Applicant respectfully submits that satellite message data is defined as the raw baud navigation binary data *encoded* in the GPS signals received from each GPS satellite and transmitted to the *processor and network interface* (Column 14, lines 27-29). Therefore, the satellite message data in Krasner is not equivalent to the *recovered navigational data signals transmitted to the GPS-equipped mobile terminal*, as recited in Claim 9, nor is it equivalent to *SMS* or *BCCH*. Additionally, Krasner describes the transmission of estimated

ranges and additional information to the mobile SPS receiver (Column 16, lines 18-22). However, there is no evidence that Krasner uses SMS or BCCH to transmit such data. Applicant respectfully submits that the use of SMS and BCCH to transmit *recovered navigational data signals to a GPS-equipped mobile terminal* is not well known in the art and respectfully traverses the Examiner's assertion of such under MPEP, Section 2144.03. Applicant further requests citation of a reference in support of the Examiner's position. Reconsideration and withdrawal of the 103 (a) rejection of Claim 9 is respectfully requested.

With respect to Claims 21-22, 32-33, and 44-45, Applicant submits that these claims have also been combined into independent claims (Claims 21, 32, and 44). Applicant further notes that Claims 21, 32, and 44 contain subject matter similar to Claim 9, and therefore cites the aforementioned deficiencies of Krasner with respect to Claim 9. Reconsideration and withdrawal of the 103 (a) rejection of Claims 21, 32, and 44 is respectfully requested.

Claims 11, 12, 34, and 35 were rejected under 35 U.S.C. 103 (a) as being unpatentable for obviousness over Camp, Jr. et al. (U.S. Patent No. 6,070,078) in view of Hermansson et al. (U.S. Patent No. 5,987,319), hereinafter referred to as "Camp" and "Hermansson", repsectively.

With regard to Claims 11 and12, Applicant notes that these claims have been combined into a single independent claim, Claim 11, including many of the elements of Claim 1. Amended Claim 11 comprises the steps of transmitting a Timing Advance parameter from the Base Transceiver Station to the GPS-equipped mobile terminal to dynamically compensate for varying distances between the GPS-equipped mobile terminal and the Base Transceiver Station and *refining the*

approximate location of the GPS-equipped mobile terminal using the Timing Advance parameter. As stated by the Examiner, Camp fails to teach the use of a Timing Advance parameter. Hermansson, although describing the utilization of a Timing Advance, focuses on using the Timing Advance for estimating distance between a base station and a mobile station to establish call-setup in a communications system (See Column 5, lines 12-14 and Abstract). There is no suggestion in Hermansson to use a Timing Advance parameter to *refine* the approximate GPS-determined location of the GPS-equipped mobile terminal in a GPS communications system. Therefore, Applicant respectfully submits that the combination of Camp and Hermansson fails to teach, suggest, or render obvious Claim 11, as amended. Reconsideration and withdrawal of the 103 (a) rejection of Claim 11 is respectfully requested.

Similarly, Claims 34 and 35 have been combined into a single independent Claim 34. Applicant submits that Claim 34 contains subject matter similar to Claim 11, and is therefore allowable for at least the reasons discussed above with respect to Claim 11. Reconsideration and withdrawal of the 103 (a) rejection of Claim 34 is respectfully requested.

It is believed that entry of this Amendment is warranted under the provisions of 37 C.F.R. § 1.116 as it clearly causes the claims active in this application to be allowable over the art of record. Accordingly, it is believed that entry of this Amendment is warranted under the provisions of 37 C.F.R. § 1.116.

In view of the foregoing, Applicant respectfully requests the thorough reconsideration of this application and earnestly solicits an early notice of allowance.

Respectfully submitted,

JENKENS & GILCHRIST,
A Professional Corporation

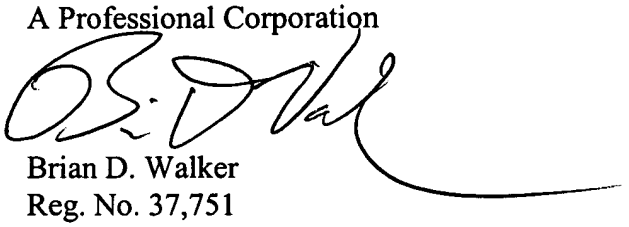

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Exhibit "A" - Claims marked to show changes:

1. (Twice Amended) In a wireless telecommunications system having a Base Transceiver Station (BTS) and a mobile terminal equipped with an integrated Global Positioning System (GPS) equipped receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a method for determining the approximate position of the GPS-equipped mobile terminal, said method comprising the steps of:

demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

recovering respective navigational data signals from each of said demodulated GPS signals;

originating a request for approximate navigational information from the GPS-equipped mobile terminal to the Base Transceiver Station;

transmitting recovered navigational data signals to the GPS-equipped mobile terminal responsive to said request for approximate navigational information; and

determining, from said transmitted navigational data signals, the approximate location of the GPS-equipped mobile terminal;

wherein the GPS satellite signals comprise one of:

Standard Positioning Service (SPS) signals received on an L1 frequency, said L1 frequency being centered at about 1575.42 MHz; or

Precise Positioning Service (PPS) signals received on an L2 frequency, said L2 frequency being centered at about 1227.60 MHz.

8. (Amended) In a wireless telecommunications system having a Base Transceiver Station (BTS) and a mobile terminal equipped with an integrated Global Positioning System (GPS) equipped receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a method for determining the approximate position of the GPS-equipped mobile terminal, said method comprising the steps of:

demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

recovering respective navigational data signals from each of said demodulated GPS signals;

determining whether the GPS signal strength at the GPS-equipped mobile terminal is adequate to permit initialization of the reference GPS receiver associated with the GPS-equipped mobile terminal within a desired response time;

if not, originating a request for approximate navigational information from the GPS-equipped mobile terminal to the Base Transceiver Station;

transmitting recovered navigational data signals to the GPS-equipped mobile terminal responsive to said request for approximate navigational information; and

determining, from said transmitted navigational data signals, the approximate location of the GPS-equipped mobile terminal.

9. (Amended) In a wireless telecommunications system having a Base Transceiver Station (BTS) and a mobile terminal equipped with an integrated Global Positioning System (GPS) equipped receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a method for determining the approximate position of the GPS-equipped mobile terminal, said method comprising the steps of:

demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

recovering respective navigational data signals from each of said demodulated GPS signals;

originating a request for approximate navigational information from the GPS-equipped mobile terminal to the Base Transceiver Station;

transmitting recovered navigational data signals to the GPS-equipped mobile terminal responsive to said request for approximate navigational information; and

determining, from said transmitted navigational data signals, the approximate location of the GPS-equipped mobile terminal;

wherein said step of transmitting is performed via one of:

a Cell Broadcast (CB) Short Message Service (SMS) message of the wireless telecommunications system; or

a Broadcast Control Channel (BCCH) of the wireless telecommunications system.

11. (Amended) In a wireless telecommunications system having a Base Transceiver Station (BTS) and a mobile terminal equipped with an integrated Global Positioning System (GPS) equipped receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a method for determining the approximate position of the GPS-equipped mobile terminal, said method comprising the steps of:

demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

recovering respective navigational data signals from each of said demodulated GPS signals;

originating a request for approximate navigational information from the GPS-equipped mobile terminal to the Base Transceiver Station;

transmitting recovered navigational data signals to the GPS-equipped mobile terminal responsive to said request for approximate navigational information;

determining, from said transmitted navigational data signals, the approximate location

of the GPS-equipped mobile terminal

periodically transmitting a Timing Advance parameter from the Base Transceiver Station to the GPS-equipped mobile terminal to dynamically compensate for varying distances between the GPS-equipped mobile terminal and the Base Transceiver Station; and

refining said approximate location of the GPS-equipped mobile terminal using said Timing Advance parameter.

13. (Twice Amended) In a wireless telecommunications system having a Base Transceiver Station and a mobile terminal equipped with an integrated Global Positioning System (GPS) receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a method for determining the approximate position of the GPS-equipped mobile terminal, said method comprising the steps of:

demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

computing an estimated location of said reference GPS receiver using said demodulated signals from said GPS satellites;

originating a request for approximate locational information from the GPS-equipped mobile terminal to the Base Transceiver Station;

transmitting said estimated location of said reference GPS receiver from the Base

Transceiver Station to the GPS-equipped mobile terminal responsive to said request for approximate locational information; and

determining, from said transmitted location of said reference GPS receiver, the approximate location of the GPS-equipped mobile terminal;

wherein the GPS satellite signals comprise one of:

Standard Positioning Service (SPS) signals received on an L1 frequency, said L1 frequency being centered at about 1575.42 MHz; or

Precise Positioning Service (PPS) signals received on an L2 frequency, said L2 frequency being centered at about 1227.60 MHz.

20. (Amended) In a wireless telecommunications system having a Base Transceiver Station and a mobile terminal equipped with an integrated Global Positioning System (GPS) receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a method for determining the approximate position of the GPS-equipped mobile terminal, said method comprising the steps of:

demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

computing an estimated location of said reference GPS receiver using said demodulated signals from said GPS satellites;

determining whether a GPS signal strength at the GPS-equipped mobile terminal is adequate to permit initialization of the reference GPS receiver associated with the GPS-equipped mobile terminal within a desired response time;

if not, originating a request for approximate locational information from the GPS-equipped mobile terminal to the Base Transceiver Station;

transmitting said estimated location of said reference GPS receiver from the Base Transceiver Station to the GPS-equipped mobile terminal responsive to said request for approximate locational information; and

determining, from said transmitted location of said reference GPS receiver, the approximate location of the GPS-equipped mobile terminal.

21. (Amended) In a wireless telecommunications system having a Base Transceiver Station and a mobile terminal equipped with an integrated Global Positioning System (GPS) receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a method for determining the approximate position of the GPS-equipped mobile terminal, said method comprising the steps of:

demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

computing an estimated location of said reference GPS receiver using said

demodulated signals from said GPS satellites;

originating a request for approximate locational information from the GPS-equipped mobile terminal to the Base Transceiver Station;

transmitting said estimated location of said reference GPS receiver from the Base Transceiver Station to the GPS-equipped mobile terminal responsive to said request for approximate locational information; and

determining, from said transmitted location of said reference GPS receiver, the approximate location of the GPS-equipped mobile terminal;

wherein said step of transmitting is performed via one of:

a Cell Broadcast (CB) Short Message Service (SMS) message over the wireless telecommunications system; or

a Broadcast Control Channel (BCCH) of the wireless telecommunications system.

24. (Twice Amended) In a wireless telecommunications system having a Base Transceiver Station and a mobile terminal equipped with an integrated Global Positioning System (GPS) receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a system for determining the approximate position of the GPS-equipped mobile terminal, said system comprising:

demodulation means for demodulating signals received from a multiplicity of GPS

satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

signal recovery means for recovering navigational data signals from each of said demodulated signals from said GPS satellites;

requesting means for requesting approximate navigational information for the GPS-equipped mobile terminal from the Base Transceiver Station;

transmission means for transmitting said recovered navigational data signals to the GPS-equipped mobile terminal responsive to said request for approximate navigational information; and

determination means for determining, from said transmitted navigational data signals to determine the approximate location of the GPS-equipped mobile terminal;

wherein the GPS satellite signals comprise one of:

Standard Positioning Service (SPS) signals received on an L1 frequency, said L1 frequency being centered at about 1575.42 MHz; or

Precise Positioning Service (PPS) signals received on an L2 frequency, said L2 frequency being centered at about 1227.60 MHz.

31. (Amended) In a wireless telecommunications system having a Base Transceiver Station and a mobile terminal equipped with an integrated Global Positioning System (GPS)

receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a system for determining the approximate position of the GPS-equipped mobile terminal, said system comprising:

demodulation means for demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

signal recovery means for recovering navigational data signals from each of said demodulated signals from said GPS satellites;

determining means for determining whether a GPS signal strength at the GPS-equipped mobile terminal is adequate to permit initialization of the reference GPS receiver associated with the GPS-equipped mobile terminal within a desired response time;

requesting means for requesting approximate navigational information for the GPS-equipped mobile terminal from the Base Transceiver Station, if said GPS signal strength is not adequate to permit said initialization;

transmission means for transmitting said recovered navigational data signals to the GPS-equipped mobile terminal responsive to said request for approximate navigational information; and

determination means for determining, from said transmitted navigational data signals to determine the approximate location of the GPS-equipped mobile terminal.

32. (Amended) In a wireless telecommunications system having a Base Transceiver Station and a mobile terminal equipped with an integrated Global Positioning System (GPS) receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a system for determining the approximate position of the GPS-equipped mobile terminal, said system comprising:

demodulation means for demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

signal recovery means for recovering navigational data signals from each of said demodulated signals from said GPS satellites;

requesting means for requesting approximate navigational information for the GPS-equipped mobile terminal from the Base Transceiver Station;

transmission means for transmitting said recovered navigational data signals to the GPS-equipped mobile terminal responsive to said request for approximate navigational information; and

determination means for determining, from said transmitted navigational data signals to determine the approximate location of the GPS-equipped mobile terminal,

wherein said transmission means comprises one of:

a Cell Broadcast (CB) Short Message Service (SMS) message over the wireless telecommunications system; or

a Broadcast Control Channel (BCCH) of the wireless telecommunications system.

34. (Amended) In a wireless telecommunications system having a Base Transceiver Station and a mobile terminal equipped with an integrated Global Positioning System (GPS) receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a system for determining the approximate position of the GPS-equipped mobile terminal, said system comprising:

demodulation means for demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

signal recovery means for recovering navigational data signals from each of said demodulated signals from said GPS satellites;

requesting means for requesting approximate navigational information for the GPS-equipped mobile terminal from the Base Transceiver Station;

transmission means for transmitting said recovered navigational data signals to the GPS-equipped mobile terminal responsive to said request for approximate navigational information;

determination means for determining, from said transmitted navigational data signals to determine the approximate location of the GPS-equipped mobile terminal,

means for periodically transmitting a Timing Advance parameter from the Base Transceiver Station to the GPS-equipped mobile terminal to dynamically compensate for varying distances between the GPS-equipped mobile terminal and the Base Transceiver Station; and

means for refining said approximate location of the GPS-equipped mobile terminal using said Timing Advance parameter.

36. (Twice Amended) In a wireless telecommunications system having a Base Transceiver Station and a mobile terminal equipped with an integrated Global Positioning System (GPS) receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a system for determining the approximate position of the GPS-equipped mobile terminal, said system comprising:

a demodulator for demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

computing means for determining an estimated location of said reference GPS receiver using said demodulated signals from said GPS satellites;

requesting means for requesting approximate locational information from the GPS-

equipped mobile terminal to the Base Transceiver Station;

a transmitter for transmitting the location of said reference GPS receiver from the Base Transceiver Station to the GPS-equipped mobile terminal responsive to said request for said approximate locational information; and

determination means for determining the approximate location of the GPS-equipped mobile terminal using said transmitted location of said reference GPS receiver;

wherein the GPS satellite signals comprise one of:

Standard Positioning Service (SPS) signals received on an L1 frequency, said L1 frequency being centered at about 1575.42 MHz; or

Precise Positioning Service (PPS) signals received on an L2 frequency, said L2 frequency being centered at about 1227.60 MHz.

43. (Amended) In a wireless telecommunications system having a Base Transceiver Station and a mobile terminal equipped with an integrated Global Positioning System (GPS) receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a system for determining the approximate position of the GPS-equipped mobile terminal, said system comprising:

a demodulator for demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base

Transceiver Station;

computing means for determining an estimated location of said reference GPS receiver using said demodulated signals from said GPS satellites;

determining means for determining whether a GPS signal strength at the GPS-equipped mobile terminal is adequate to permit initialization of the reference GPS receiver associated with the GPS-equipped mobile terminal within a desired response time;

requesting means for requesting approximate locational information from the GPS-equipped mobile terminal to the Base Transceiver Station, if said GPS signal strength is not adequate to permit said initialization;

a transmitter for transmitting the location of said reference GPS receiver from the Base Transceiver Station to the GPS-equipped mobile terminal responsive to said request for said approximate locational information; and

determination means for determining the approximate location of the GPS-equipped mobile terminal using said transmitted location of said reference GPS receiver.

44. (Amended) In a wireless telecommunications system having a Base Transceiver Station and a mobile terminal equipped with an integrated Global Positioning System (GPS) receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a system for determining the approximate position of the GPS-equipped mobile terminal, said system comprising:

a demodulator for demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

computing means for determining an estimated location of said reference GPS receiver using said demodulated signals from said GPS satellites;

requesting means for requesting approximate locational information from the GPS-equipped mobile terminal to the Base Transceiver Station;

a transmitter for transmitting the location of said reference GPS receiver from the Base Transceiver Station to the GPS-equipped mobile terminal responsive to said request for said approximate locational information; and

determination means for determining the approximate location of the GPS-equipped mobile terminal using said transmitted location of said reference GPS receiver;

wherein said transmitter transmits over one of:

a Cell Broadcast (CB) Short Message Service (SMS) message over the wireless telecommunications system; or

a Broadcast Control Channel (BCCH) of the wireless telecommunications system.